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New constraints on extended Higgs sectors from the trilinear Higgs coupling

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The trilinear Higgs coupling λ_{hhh} is a crucial tool to investigate the structure of the Higgs potential and to probe possible effects of physics beyond the Standard Model (SM). Focusing on the Two-Higgs-Doublet Model (2HDM) as a concrete example, I will discuss the calculation of the leading two-loop corrections to λ_{hhh}, and show that this coupling can be significantly enhanced with respect to its SM prediction in certain regions of parameter space. I will show that the current experimental bounds on λ_{hhh} are already sufficient to rule out significant parts of the 2HDM parameter space that would otherwise be unconstrained. Finally, I will present a benchmark scenario illustrating the interpretation of the current results and future measurement prospects of λ_{hhh}.

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